

Appln. No.: 10/718,935

Reply to Office action of March 15, 2006

REMARKS

In the Specification

The cross reference to a related application has been amended to include the now-issued Patent No. 6,682,079, as requested by the Examiner.

In the Claims

Claim Objections

Claims 2-4 have been amended to correct the claim dependency to depend from independent claim 1.

Claim Rejections – 35 U.S.C. § 112

Claim 1 has been amended to correct the antecedent basis issue regarding “the plate”. Accordingly, Applicant believes claims 1-4 to now be in proper form for allowance.

Claim Rejections– 35 U.S.C. § 103

Claim 1 has been rejected as being unpatentable over Backlin (US Patent No. 4,369,980) in view of Olson (US Patent No. 3,279,235). Applicants respectfully traverse this rejection, and further, have amended claim 1 to more clearly define over Backlin.

As amended, claim 1 recites a method of manufacturing a metal gasket assembly, including providing a plate having opposing sides with an opening therethrough. The sides define a thickness corresponding to a compressed thickness of the gasket assembly. Next, forming an annular grommet having a generally u-shaped cross section defining a pair of axially spaced legs having outer axially opposite sealing surfaces spaced a predetermined distance apart when in an undeformed state corresponding to an initial thickness of the grommet which is greater than the thickness of the plate. Further, installing the grommet in the opening of the plate, and wherein the grommet is fabricated of a heat treatable ferrous-based metal material and is formed to the annular, u-shaped cross sectional configuration when the grommet material is in a relatively soft, plastically

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deformable preheated condition, and where after forming, the grommet is subjected to a heat treatment to impart elasticity and strength properties to the grommet enabling the legs of the grommet to be compressed elastically under an axial compression load to a reduced thickness corresponding substantially to the thickness of the plate and to return to the initial thickness upon removal of the compressive load.

In contrast, Backlin discloses a gasket 8 having a body 16 and a metal wrap 23 which is pressed against surfaces 24 and 25 of the gasket body with a sealing hoop 21 and a reinforcing hoop 22 encased in the metal wrap 23 (Column 2, Lines 28-35), and wherein the metal wrap enclosing the hoops is fastened to the body 16 (Column 1, Lines 58-60), and as shown in Figures 2 and 4). Accordingly, nowhere in Backlin is there a teaching, suggestion or motivation to manufacture a metal gasket assembly as taught by Applicant. In particular, nowhere in Backlin is it suggested that the legs of the body 16 are spaced a predetermined distance apart when in an undeformed state corresponding to an initial thickness that is greater than the thickness of the body 8, as the legs are attached to the body 16. Further, Backlin does not teach, suggest or motivate constructing the body 16 so that the legs of the body are compressed axially under an axial compression load to a reduced thickness corresponding substantially to the thickness of the plate and return to the initial thickness upon removal of the compressive load. To suggest otherwise is reading Applicants' invention into Backlin using improper hindsight. The only reference in Backlin to a force applying member is to the sealing ring 21 which forms a seal as it is compressed between the head 6 and the sleeve 2 (Column 2, Lines 35-37). Accordingly, there is no teaching, suggestion or motivation in Backlin that the legs of the body 16 apply any force elastically or otherwise, let alone returning to some initial thickness upon removal of a compressive load.

The Examiner acknowledges that Backlin does not teach a heat treatment to impart elasticity and strength properties to the grommet in addition to the plastically deforming of the grommet. This bolsters applicants' position above in that the legs of Backlin do not return to their initial thickness upon removal of a compression load. As such, the Examiner brings in Olson to acquire the heat treating step. Applicants contend this is an improper combination, as Olson is directed to a method for fabricating a self-retaining protective device, and is altogether unrelated to a method of manufacturing a

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metal gasket assembly. There is nothing in Backlin that would suggest or motivate one skilled in the art to look to Olson to incorporate a heat treating process, as the fire ring in Backlin performs its intended function without being heat treated. Accordingly, in addition to the aforementioned shortcomings in Backlin to arrive at Applicants' invention, Applicants contend that the Examiner has failed to establish a prima facie case of obviousness, at least in part due to an improper combination.

Claim 1 has also been rejected under 35 U.S.C. § 103(a) as being unpatentable over Czernik (US Patent No. 3,532,349) in view of Olson. Applicants respectfully traverse this rejection.

In contrast to Applicants' claimed method of manufacturing a metal gasket assembly, as described above in amended claim 1, Czernik discloses a cylinder head gasket having a metal core 10 with elastomeric inorganic fibrous material 13 bound on opposite sides thereof. A grommet 15 which is generally u-shaped in cross section encircles a fire ring 14 which is highly compressible at low loadings and which has low elasticity (Column 3, Lines 65-71). The fire ring is basically inelastic and upon removal of load, a minimal recovery is noted (Column 4, Lines 40-42). Figure 4 shows the gasket installed between the head and block of an engine, wherein the firing ring 14 and flange 15 are compressed. There is no discussion within Czernik that the flange 15 is compressed elastically such that it recovers substantially to its uncompressed and initial thickness as shown in Figure 2. In fact, it stands to reason that the flange 15 does not recover to its initial thickness given the ring 14 is highly inelastic, as mentioned.

As acknowledged by the Examiner, Czernik does not disclose subjecting the grommet to a heat treatment to impart elasticity and strength properties to the grommet, nor plastically deforming the grommet. As such, the Examiner combines Olson with Czernik to derive the heat treating step. For the same reasons stated above regarding the combination with Backlin, the Applicants contend that this is an improper combination, and thus, state that the Examiner has failed to establish a prima facie case of obviousness.

Accordingly, Applicants contend that claim 1, as amended, defines patentable subject matter and is in proper condition for allowance. Such action is respectfully requested.

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Claims 2-4 are dependant upon base claim 1, and are believed to define patentable subject matter and to be in condition for allowance for at least the same reasons. As such, Applicants respectfully request allowance of the claims.

New Claims

Dependent claims 5-7 have been added to depend from amended base claim 1, and thus, are believed to define patentable subject matter and to be in condition for allowance for at least the same reasons. No new matter has been added in any of these new claims.

Claim 5 is dependant upon amended base claim and further includes defining an annular gap between the grommet and the plate during the installation step. None of the references cited, whether considered separately or in combination with one another teach, suggest or motivate one skilled in the art to arrive at such a method of manufacturing a metal gasket assembly. Accordingly, new claim 5 is believed to further define patentable subject matter and to be in condition for allowance. Such action is respectfully requested.

Claim 6 is dependent upon amended base claim 1, and further includes forming the legs having free ends, with the free ends being spaced radially inwardly from the opening after the installation step. None of the references cited, whether considered separately or in combination with one another teach, suggest or motivate one skilled in the art to arrive at such a method of manufacturing a metal gasket assembly. Accordingly, new claim 6 is believed to define patentable subject matter and to be in proper condition for allowance. Such action is respectfully requested.

Claim 7 is dependent upon amended base claim 1 and further includes defining a space between the legs with the space being free from any compression limiting materials such that the legs are free to elastically deform under the compression load. None of the references cited, whether considered separately, or in combination with one another teach, suggest or motivate one skilled in the art to arrive at such a method of manufacturing a metal gasket assembly. Accordingly, new claim 7 is believed to define patentable subject matter, and to be in condition for allowance. Such action is respectfully requested.

It is believed that this application now is in condition for allowance. Further and favorable action is requested.

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The Patent Office is authorized to charge or refund any fee deficiency or excess to
Deposit Account No. 04-1061.

Respectfully submitted,

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May 25, 2006
Date

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CERTIFICATE OF MAILING

I hereby certify that this **Amendment** is being deposited with the United States Postal Service as First Class Mail, postage prepaid, in an envelope addressed to the Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450 on May 25 2006.

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